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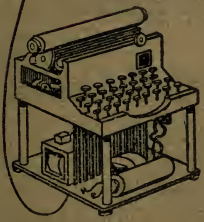
What BURLINGAME Did

BY
ROBERT CLEVELAND



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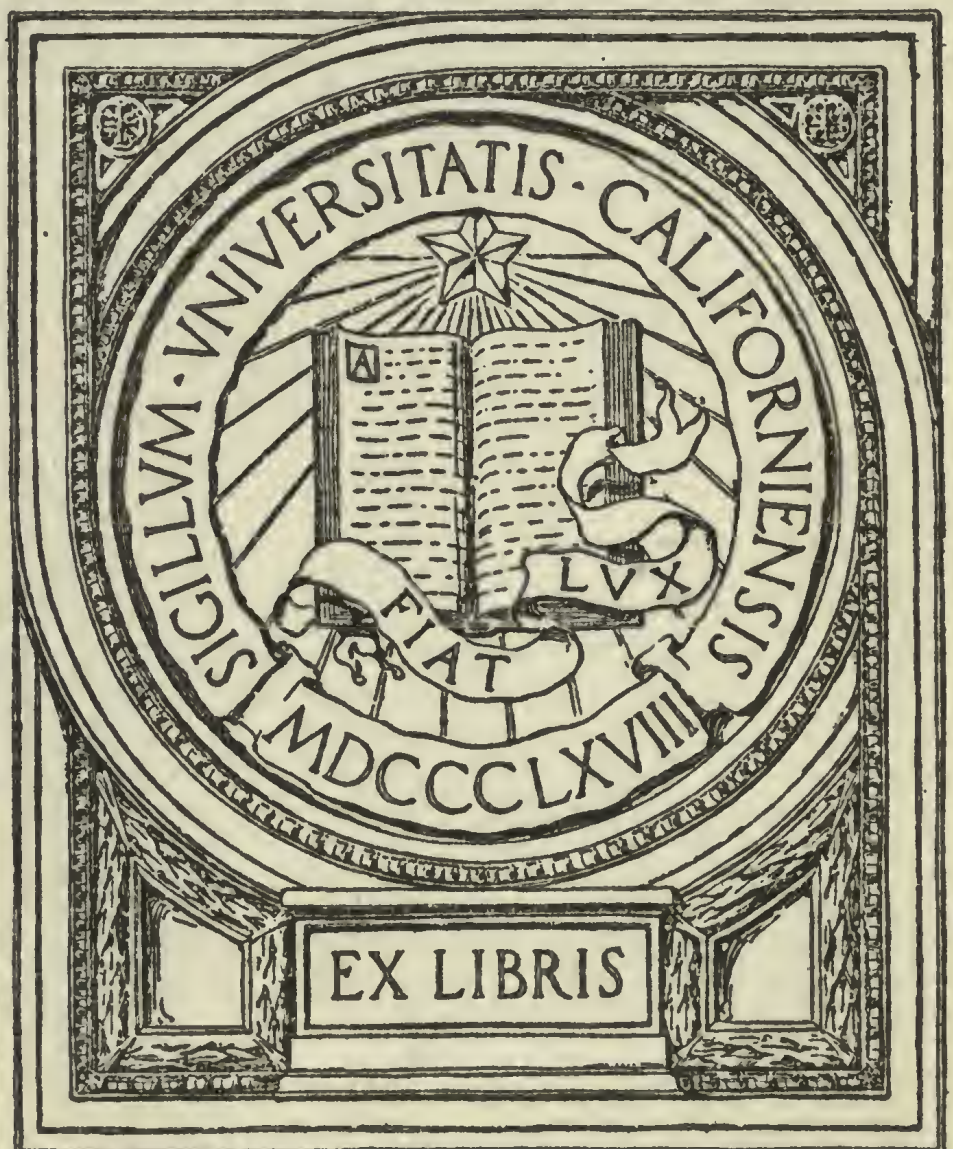

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ELMER BURLINGAME

What BURLINGAME *Did*

UNIV. OF CALIFORNIA

A True Story of a
Young Electrician

by
ROBERT CLEVELAND

11 984 m

SAN FRANCISCO
1908

Class of 1887

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The Burlingame Underwriters

TO THAT TYPE OF
INDIVIDUAL

who is willing to investigate before passing judgment, who analyzes carefully that his conclusions may be sound, who has the foresight to see what the future will bring forth, who is willing to stand by the courage of his convictions and back them with his money, if necessary, this book is

RESPECTFULLY
DEDICATED

813229

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THE EVOLUTION OF AN IDEA

CHAPTER I

THE EVOLUTION OF AN IDEA

JUST above me as I write this little story of Elmer Burlingame is a small electric bulb diffusing light which enables me to see the keyboard of the typewriter.

One day that bulb existed in the brain of man. And today there are bulbs like it all over the world, "from Greenland's icy mountains to India's coral strand."

Growth of an Idea

The typewriter on which the story is being written, was only an idea but a few years ago—a belief in the mind of a human being. And while I write I

know that the keys on millions of other typewriters in every quarter of the universe are ticking in unison.

When I have finished the manuscript it will be given to a printer in whose shop the type will be set up on a linotype machine and the story will be put into imperishable form just as you have it before you in this little book. The linotype, only a few years ago was going through the process of evolution by a series of successive thoughts in the brain of the inventor. Those thoughts have been crystallized. There is not a well equipped news-

Evolution of a Thought

paper or printing plant in existence but has one or more of these wonderful labor-saving devices.

A few minutes ago I was interrupted by a call to the telephone. As I hung up the receiver I reflected on the achievement of Alexander Bell and said to myself, "Just think, twenty-five years ago that message would have been sent to me by a messenger boy, yet I transacted the business in the short time of twelve seconds."

This Busy World

In this busy world of ours we have gotten so accustomed to "horseless" carriages, "girlless" telephones, "brainless" adding

machines and other labor and thought saving devices that we accept these inventions that figure in our daily lives with but little thought of the interesting stages they go through from the first idea in the brain of the inventor to the finished product.

Each is a story of absorbing interest when the facts are brought to our attention. The concentrated thought on the part of the inventor, his first crude model, his original finished model and the acceptance of his product by the public, form a story of evolution far more entertaining than was ever penned by the most imaginative

A Story of Interest

writer. The true story has a real flesh and blood being as its central figure, and his early struggles, his disappointments, his achievement, his triumph tug at our heart strings and appeal to our emotions.

We profit by a study of the lives of others and particularly those who attain success solely through their own efforts, overcoming every obstacle that confronts them.

The story of Elmer Burlingame is an inspiration to the man who wants to get on in this world, a guiding star to the individual who wants to do things, a stimulus to the person

To get on in the World

who wants to learn more, earn more and round out life's journey in ease and comfort.

THE CRYSTALLIZATION OF AN IDEA

CHAPTER II

THE CRYSTALLIZATION OF AN IDEA

IN THE autumn of 1832, Professor Samuel F. B. Morse first conceived his idea of telegraphy. After experimenting with electro-magnets, it occurred to him that it might be possible to send a series of electrical impulses over a wire and if so why could not these impulses be made to convey a meaning.

Accordingly he acted on this belief and five years later, in 1837, gave a public demonstration of telegraphy, using the same system that is in vogue today, namely, dots and dashes

Same Old System for 70 Years

to represent letters, numerals, punctuation marks and characters. All are familiar with what Morse has done for civilization, but few know that in all these seventy odd years since the invention of the telegraph, but little improvement has been made. Practically speaking, the only improvement is the development of multiple telegraphy. A system has been devised by which four messages can be sent at one time, two each way, over a single wire, but the principle as laid down by Morse is identically the same.

But Little Improvement

This was the situation that confronted Elmer Burlingame

when he took up the study of electricity. He wondered at it when but a boy in his "teens." Human effort could not be improved upon; and the mechanical side of telegraphy seemed to have about reached the limit with the present system.

He thought, and studied the question from every angle. He had a talent for electrical experiments. When only a boy of fourteen years of age he had successfully installed according to contract, a burglar alarm system, in a large flour mill in his home town.

A New Idea

In 1898 while attending high school he got his idea. Why

Send A Roman Letter

not devise a means for sending a Roman letter over a wire instead of the usual dots and dashes which represent a letter and which only an expert can interpret? Why could not two ordinary typewriters be connected with a wire so that when the letter "A" was struck on the keyboard of the sending machine, the same letter would strike on the receiving typewriter? Here was his cue.

He was only nineteen and was without funds for experimental purposes. So he waited. A year later upon graduation he secured employment from the local telephone company and

acted in the capacity of "trouble man"—he who responded to complaints and repaired the offending instrument. He was advanced from time to time during his eight years of telephone work, and upon severing his connection occupied the position of toll line wire chief, and was substantially the manager of all long distance wires.

Self Denial

Through these years of employment he kept up his experiments, denying himself every entertainment and luxury that he might have money for the necessary electrical supplies for conducting his investigation. Only he knows how he plodded

and worked when off duty. And many a night he was in his little home laboratory until the wee hours of the morning.

Pluck Won

Perseverance and pluck won. He overcame every obstacle and in 1905 success crowned his efforts. He had not sufficient money to purchase a typewriter, so made a keyboard of wood, crude in the extreme but capable of serving the purpose.

He had become familiar with the principles governing wireless telegraphy so decided to apply it to his invention. He built a coil by hand that threw an eighteen inch spark, and erected

A Success

two poles thirty miles apart—one in La Porte, the other in South Bend, Indiana. Upon completion of his apparatus he sent seven letters of the alphabet over this distance and they were recorded exactly on the receiving machine. He had witnesses to note his achievement. Soon the community was apprised of what had occurred.

The Whole World Took Notice

The La Porte Herald and Indianapolis Star gave many columns to the project and the electrical world was at once astounded. Papers all over published the news and Burlingame was started on the

road to fame. That concentration of thought, those times of self-denial, those days and nights of study and work had earned him a reward.

He succeeded in securing a typewriter and though he still used his original wooden keys for sending, he successfully transmitted over the distance in 1907 several other letters of the alphabet, together with some of the numerals, characters and punctuation marks, just as they are used on the keyboard of all typewriters.

Birth of the Telegraphing Typewriter

Here was the birth of the telegraphing typewriter. Burlingame had taken up the work

Burlingame Telegraphing Apparatus Attached
To a "Stearns" Typewriter

where Morse left off and offered to the world a new and better system, a system that needed no human receiver, a system so simple in its operation that anyone understanding the A B C's could send a message or read one at the receiving end as fast as it came from the machine.

Anyone Can Send A Message

The publicity given the invention particularly by scientific and technical journals attracted the attention of a number of San Francisco business men who formed a company and supplied young Burlingame with a complete experimental shop where he could make a few sets of machines.

WHAT BURLINGAME DID

Recently a set of these machines was exhibited in San Francisco, Stockton, Los Angeles, New Orleans and Kansas City, where they were put to a test by some of the best known electrical experts in the United States. Their opinions were unanimous that Burlingame had reached the goal which has been the dream of inventors for years.

Expert Opinion

A NEW SYSTEM OF TELEGRAPHY

CHAPTER III

A NEW SYSTEM OF TELEGRAPHY

THE pulsations of the commercial world are recorded in messages. Every piece of intelligence, every article of news, every communication that is transmitted from one place to another is a message. Stop the messages of the world for even a day and think what would happen to governments, to railroads, to the shipping and financial interests. Unquestionably the stopping of messages would seriously affect practically every person on earth.

A World of Messages

Think also what it will mean to all these interests if the present system of messages can be improved upon by an invention that will mean greater speed, more accuracy and less expense.

Millions Spent on Messages

Millions of dollars are paid for the sending of messages every month. Thus every fraction saved on a single message will mean in the aggregate a saving of millions of dollars in the course of a year.

You can readily see that the world stands waiting for an improvement in the sending and receiving of messages.

What Burlingame has done

for posterity can not be measured by dollars and cents; neither is it within the pale of human imagination. We can, however, see its practicability by noting its many uses. But first let us become more familiar with the operation of Burlingame's invention.

He takes two ordinary typewriters of standard make, such as the Stearns, L. C. Smith, Underwood or Monarch. The two that the writer observed were the "Stearns," and they were the same machines that one would buy in the market for office use. Each was equipped with the electrical

The Burlingame System

apparatus to set the electrical waves in motion and record them at the other end.

Like A Carbon Copy

The operator sits at the sending typewriter and operates the machine just as the ordinary stenographer types letters. The message is recorded on the receiving instrument as perfectly as though it were a carbon copy of the original. Likewise the sending machine makes a copy of the message just as it is sent. The system is a sending, receiving and recording operation, all in one.

Each letter on the keyboard, as well as the characters, numerals and punctuation marks,

has its own individual combination of electrical impulses. By magnetic attraction the type bars on the receiving machine are attracted toward the roller where the paper rests.

When the letter "A", for example, is struck on the key of the sending machine, a set of electrical impulses is set in motion over the wire which releases the letter "A" on the receiving machine and the type prints the letter on the paper roll. So on through the whole keyboard the operation is the same. In like manner the shift key, the device for changing from capitals to small letters

Prints the Message

and vice versa, the spacing between words, the return of the carriage and the spacing for the next line, all are operated automatically in simultaneous action with the movements of the sending machine. Thus anyone familiar with the letters on the keyboard of any typewriter can send a message just as easily as he or she would typewrite a letter; and the message is recorded on the receiving machine in page form, corresponding to the usual typewritten business communication.

Just Like Writing a Letter

There is .no chance for mistakes, through careless sending or faulty hearing. The machine

Makes No Mistakes

takes down the message just as sent. There is no human "receiver" to make a mistake by faulty hearing, carelessness or neglect as is the case with the present Morse system of dots and dashes in use all over the world today on every telegraph line or with the various wireless systems.

Let us compare the Burlingame and Morse systems of telegraphy, taking the word "San Francisco" for example.

The Morse System

S A N F R A N C I S C O

... — — — ... — — ... .

Thus the "S" is represented

by three dots, the "A" by a dot and a dash, the "N" by a dash and a dot, and so forth. A dash is equal in time to two dots. An interval of time equal to three dots must be allowed between letters, and time equal to six dots between words. Therefore the word "San Francisco" requires as much time to send by the Morse system as would be necessary to send a succession of seventy-five dots.

A Comparison

The Burlingame System

S A N F R A N C I S C O

By the Burlingame system, two impulses pass over the

wire as the letter is being struck on the keyboard. Then there is a pause in time equal to a dot to enable the printing mechanism to operate. Each letter and the space after it are sent as quickly as three dots. Thus the sending of each letter and the spacing between each letter occupy an interval of time equal to three dots. The spacing between words takes no longer time than the sending of a letter. The sending of the word "San Francisco" by the Burlingame system requires in time what would be necessary to send thirty-eight dots. The Burlingame system

How It Saves Time

is two times quicker than the Morse; or in other words the operator could send the word twice by the Burlingame method, while the Morse operator was sending it once.

Two Times Quicker

In sending a news article the Burlingame system will receive and record automatically two words to every one sent by the Morse principle. And when the message is completed, there it is in the Burlingame machine plainly written out, standing as an indisputable fact that the message was recorded just as sent. The Morse operator on the other hand is compelled to listen to the ticking of the dots

and dashes on the sounding key, then determine what the words are, and finally write them out on paper. He has no record to consult, no proof of what was sent. He is guided only by his hearing.

The Burlingame system requires no person to receive the message; and if for instance there is no one in the office or no one near the machine, the message is printed out in full just the same; whereas the Morse operator would have to keep calling and calling the receiver to take his place and listen. Look at the time lost by the Morse system, in the

No Human Receiver

holding of the wire and the useless calling of the operator.

Man Makes Mistakes

Anything that depends on human endeavor or effort is subject to occasional mistakes. "To err is human." The Burlingame telegraphing typewriter, being entirely mechanical at the receiving end and practically so at the sending end will make no mistakes.

A large mercantile concern in New Orleans once wired by the Morse system to their New York correspondent: "Protect our draft." The message delivered to the correspondent read: "Protest our draft,"

which of course has a very different meaning.

The mistake arose because of the small difference between the letter "C" and the letter "S." In the word "San Francisco" noted before you will observe that the two letters in question are each represented by three dots, only the letter "C" has a space between the second and third dot.

An Easy Mistake

By the Burlingame system a "C" is always sent and received as a "C." At least the message is received exactly as it is sent even to the punctuation.

Because of its simplicity and accuracy, requiring no expert

What Others Say

to send a message and no one at all to receive it, several of the foremost electrical engineers, government signal service officers, expert telegraphers and other men prominent in the business circles of the coast cities, state emphatically that the Burlingame invention will shortly supplant the Morse system everywhere.

What a triumph is in store for young Burlingame, right in the dawn of life, even before he has passed the thirtieth milestone!

THE USES FOR THE BURLINGAME SYSTEM OF TELEGRAPHY

CHAPTER IV

THE USES FOR THE BURLINGAME SYSTEM OF TELEGRAPHY

IF Burlingame did nothing more than replace the Morse system in the sending of messages and press dispatches the world would owe him a debt of gratitude; but his invention opens up new fields which are beyond the achievements possible with all other telegraphic machines.

The trolley not only replaced the horse and cable cars in cities, but it has developed suburban travel. It enables a man to reside many miles from his place of business and still

Opens New Fields

be able to reach it quickly. It is through opening up a new field that the trolley invention has made so much money for its backers.

And so on might be mentioned many other inventions that not only fulfilled the primary purposes for which they were made, but created new fields for their use.

Each and every one of the inventions of this character has been a great money maker because of the increasing demand developed by exploring broader territories.

Great Money Maker

This is the remarkable part of the Burlingame invention.

It supplants another system and creates many new uses for the machine by supplying the world with a service which it has long wanted but which other inventions have been unable to furnish.

A Long Desired Service

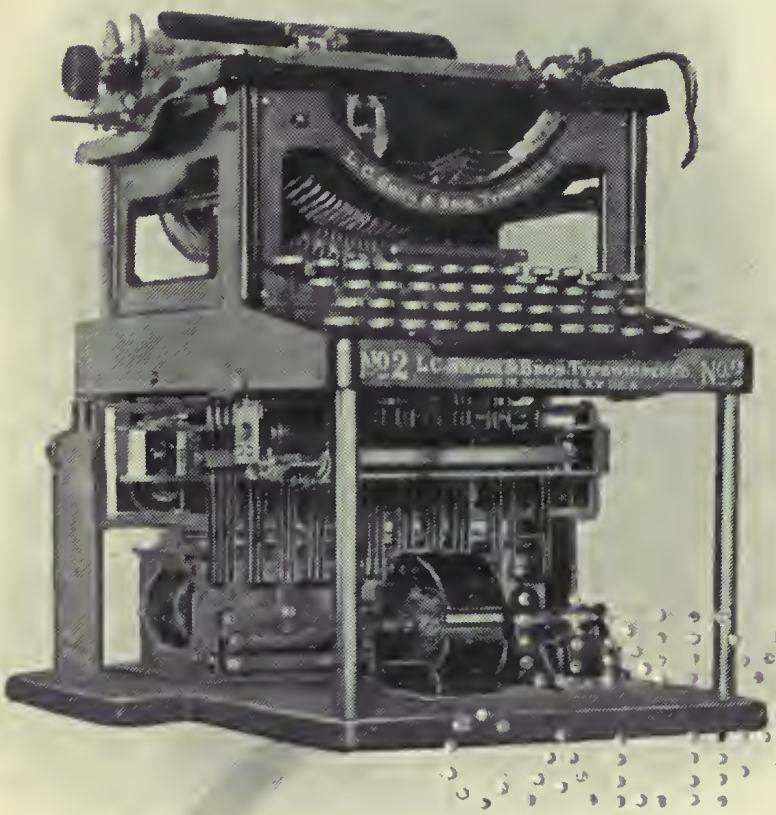
A cursory glance at the many practical uses for the telegraphing typewriter readily shows that Burlingame has reached a goal not only beyond his fondest hopes, but what might be expected in this progressive, quick-moving age of ours where we accomplish in minutes what required hours for our grandfathers to perform.

Of all the uses described by

Burlingame to the writer the most interesting and practical in utility and service to the public is what he terms "the news ticker service."

The News Ticker

Subsidiary companies using his machines will be formed in each city and town. There will be a central news station in each community run in connection with a newspaper, or the Associated Press. In the places of business and homes of subscribers will be little receiving instruments weighing only five pounds. Each instrument will be leased just as the telephone is, for a nominal sum monthly. Commencing



Burlingame Telegraphing Apparatus Attached
To an "L. C. Smith" Typewriter

early in the morning, and continuing all day long and into the hours of the evening, the news of the world will be sent to these business houses and homes all over the city. The little receiver or ticker will print the news in page form on a roll of paper that unreels from the instrument. The news will be very brief, just enough to give the gist of the matter. The detailed account will be given to the public in the usual manner through the newspapers.

News Day and Night

For example, the machines will give the telegraphic news for two hours in the morning. Whatever happens anywhere,

just as soon as the news is gathered, it will be sent on these machines. Imagine the satisfaction the subscriber will derive in getting the news so quickly and concisely. And we must admit that we Americans are "news crazy."

News Crazy

The financial news will then be given for two hours, followed by the sporting news and local news for an equal period. Then general news will be sent out the remainder of the evening and night.

Electrical experts, newspaper men and business men who have investigated Burlingame's invention say that there will be

more "news tickers" in use within two years than there were telephones in the first fifteen years, and later there will be more news tickers installed than all the telephones combined. A moment's reflection on the wonderful achievements in the world of invention during the past few years quickly conveys to one the positive assurance that such will be the case.

Exceed the Telephone

Burlingame has proven he can do it, and it is only a question of developing the idea with sufficient capital to carry it out. History shows that capital has responded to perpetuate every practical inven-

tion that gives the world what it has been waiting for. And the men who have had the courage of their convictions to back their judgment with their money are the ones who have reaped fortunes by going in where "doubting Thomases" have not dared to tread.

Capital Always Responds

Another use of the telegraphing typewriter of almost equal importance is in connection with the sending and receiving of press dispatches to newspapers. The Burlingame machine will be built with the same keyboard as the linotype on which the type of all large newspapers is set. The operator sending the

Aid to Newspapers

message is in reality setting the type on the linotype in the newspaper offices, thus dispensing with a receiving operator and a linotype operator. Immediately upon receipt of the completed message, the type is all ready to make up into page form for going to press. Just think of the saving of time, labor and money.

There are published in the United States and Canada today 2500 daily newspapers, all of which will eventually receive their telegraphic news in this manner.

Add to the Use of the Telephone

One exceedingly practical use for the Burlingame invention

is in conjunction with the telephone as a sending and recording device for important communications that it is necessary to preserve. Today after a telephone receiver is hung up the preceding conversation is entirely obliterated. It is simply one man's word against another's as to what was said. With the Burlingame machine attached to a telephone, the person desiring to convey a message can have any part of it recorded by simply connecting the sending device with the wire. The receiving machine being connected likewise will receive and record whatever part of the

A Matter of Record

message it is desirable to preserve. All the sender does is to strike the keys on his typewriter instead of speaking into the transmitter. By this method no dispute can arise. There it is in black and white just as sent.

Down In Black and White

Should a person ring up another on the telephone and find that the party was not in his office or home as the case might be, he would simply connect his telegraphing typewriter with the wire and transmit the message. Upon the return of the party the message would be in the machine ready for him to learn who had rung him

up and what was the nature of the business. Time is the essence of business. That is why the public has welcomed every time-saving device with open arms. You can already see the demand that awaits Burlingame's invention.

Saves Time

The miscellaneous uses of this new system of telegraphy are so many that it would take a dozen books like this to merely describe them without going into details. Mention can be made of a few to show the practicability of the Burlingame invention, when applied to accomplish a certain purpose.

Other Uses

The police department in

every large city has telephones installed along the several "beats." The officer rings up the central office at stated intervals to get instructions. But it is almost impossible for the central office to get him with the present system. Besides it would require a great amount of time to ring up each officer and convey to him any instructions.

Help the Police

Burlingame proposes to install one of his machines on every "beat" in conjunction with a signal system. All machines are on the same wire and are connected with the central office. Above each machine is

a long arm like a railroad semaphore for use in daytime and a red light for night.

Say that a crime has been committed and a description of the culprit secured. The officer securing this information goes to the nearest machine and by a switch transforms it into a sending instrument. He conveys the intelligence to headquarters and then the central operator in turn sends the description to every officer in the city together with the necessary instructions. Whether there be a dozen or a hundred instruments scattered about the city, each and every one types the message clearly,

Catch Criminals Easier

as perfectly as the type you are reading in this book.

When the central operator begins the message, the red arm or red light signifies it as the case may be and no matter at what distance the officer on watch is from the machine, he knows by observing that a message is being sent him. He goes to the machine and likely before he even reaches it, there is the message printed out in full. He has but to remove it from the machine, read and act. Can you conceive of what this would mean to every municipality and how anxious the police would be to have such a

Written Instructions

system installed? And can you further conceive of the number of machines that would be required all over the world in civilized communities?

All Cities Will Want It

The system would also be of great service to the fire department. Each alarm brings out only a certain number of engines, hose carts and crews within a certain proximity to the fire. Suppose that the chief desired some apparatus in some other station. He would simply go to a machine and telegraph for the equipment desired. The present system of fire alarm boxes would also be used but

Assist Firemen

the Burlingame invention would greatly supplement it.

Scarcely a day passes without a railroad accident somewhere because of messages that are misunderstood. For example, in the Morse system the figures "2" and "3" are similar. The "2" is represented by two dots, a dash and two dots; the "3" by three dots, a dash and a dot. A message reading, "Take siding No. 2," could through carelessness or faulty hearing on the part of the operator be interpreted, "Take siding No. 3." The mistake is possible; and after it is sent what proof is there that the message was sent with a "2"

Prevent Railroad Wrecks

and not "3"; and how could the responsibility be placed where it belonged?

A Matter of Record

The Burlingame machine records at each end of the line, the message just as sent. If the operator strikes a "2," the receiving machine types a figure "2" on the paper. Mistakes are thus obviated, and wrecks prevented. The railroad stands waiting today for the new and improved system; it is but a matter of a short time when they will be equipped with the Burlingame system of telegraphy.

The same principle that governs the electrical impulses of the telegraphing typewriter

can be used to further perfect the block signal system of semaphores used by the railroads, and make their operation more efficient. Furthermore a conductor could telegraph from any siding along the road where a machine was installed; and it would not require an operator in constant attendance.

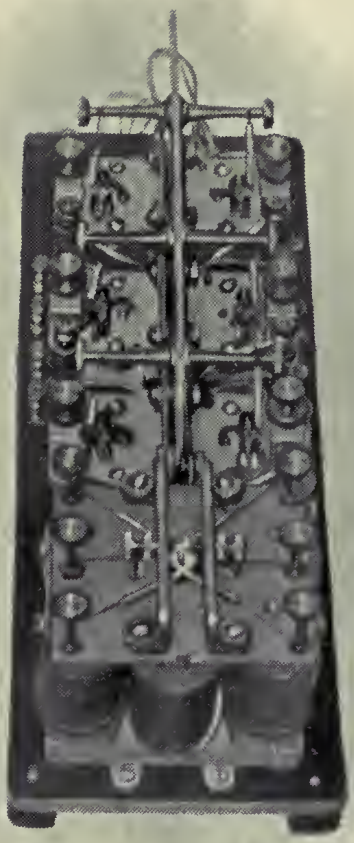
For business purposes the telegraphing typewriter will be indispensable. Wherever it is desirable to convey or transmit messages there is a demand for the Burlingame machine. To enumerate the uses is beyond the conception of any man, for every business needs this in-

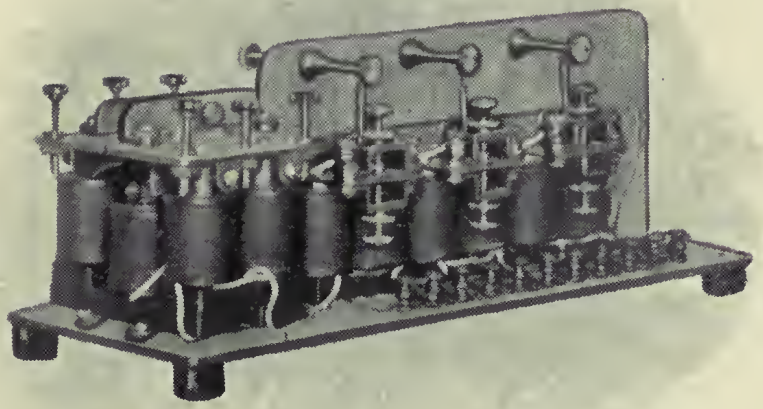
For Business Purposes

vention for one purpose or another.

Suppose for example a bank were equipped with the machines. The paying teller would have an instrument on his counter. In would come a man with a check and the teller might have some doubt about cashing it. He would write on his machine, "Is John Jones' check good for $125?" The machine at the bookkeeper's desk would record the message. After consulting his books, the bookkeeper would switch his machine over to a sending instrument and possibly reply, "No. Already overdrawn." This would require but

Value to a Bank





The Burlingame Relay For Long Distance
Transmission Of Messages

a few moments and the transaction would be done secretly. The advantage of such a system is evident.

For The Government

Consider if you will the value of Burlingame's invention for the Government in war or at peace, on shore or afloat. The system will work either by wire or wireless. Communications between battleships at sea should be a matter of record of every message sent and received. This is not possible with the wireless telephone or the wireless telegraph using the Morse system. With the Burlingame system, no dispute can arise about orders for everyone is

faithfully recorded on the ship sending and the ship or ships receiving the message. Remember a voice can be misunderstood, a spoken word is gone forever without a record of it. The ticking of an instrument leaves no impression except on the memory of the man who heard it. A message in writing stands imperishable and unimpeachable.

A Means For Comparison

In comparing the Burlingame telegraphing typewriter with all other forms of transmitting messages by wire or wireless it narrows down to a sound from an instrument or a human voice versus a mechanical action.

The former is subject to mistakes and does not stand as a matter of record after the message has been sent. The latter method is infallible as the recorded message always serves as indisputable proof.

Indisputable Evidence

You, patient reader, can let your imagination carry you to every nook and corner of this wonderful world of ours; you can think of every kind of message that is transmitted by every kind of system from Morse's invention to date; you can even delve into the future and ponder on the needs of the commercial world in the years to come; and wherever your

imagination carries you, there you will find urgent use for the invention that Burlingame has given to civilization.

THE HISTORY OF OTHER LABOR AND THOUGHT SAVING INVENTIONS

CHAPTER V

THE HISTORY OF OTHER LABOR AND THOUGHT SAVING INVENTIONS

A HUNDRED years ago when a man invented some wonderful device or piece of mechanism he was looked upon with suspicion, regarded as a menace to society and credited with having supernatural powers. Often he was imprisoned.

Gradually enlightenment through education replaced ignorance and superstition, and while the public did not mistrust the inventor or accuse him of witchery they doubted the possibilities of each invention

A Hundred Years Ago

until it was proven to the satisfaction of all that it was a practical device.

To Doubt Is Human

Even today, in the age of wonderful inventions that are now in constant use, a certain class is always prejudiced against any new device until forced to accept it through public recognition.

This principle of doubting is not confined to people of small education or influence either, but is as often a characteristic of intelligent and wealthy individuals as of those who have but little of this world's goods.

That is the very reason why so

many men born with improvident surroundings frequently acquire great wealth on small investments. They investigate, believe their own eyes and have faith in their judgment.

Bell and His Telephone

We are all familiar with the early struggles of Alexander Bell when he invented the telephone. We know how the public at large ridiculed his invention and how he was compelled to give stock in his newly formed company in return for life's necessities. But wise were those who accepted his proposition.

The Linotype

Ottmar Mergenthaler worked for many years on the linotype before he could get backers to

finance his enterprise. Today the company has paid over $20,000,000 in dividends and is paying its stockholders over $1,500,000 annually.

A story is told of George Westinghouse and his air-brake. He had tried time and again to get an interview with Commodore Vanderbilt who at that period was general manager of the New York Central Lines. Each effort had been unsuccessful. Finally through influential friends an interview was granted.

The Air-Brake

Young Westinghouse was ushered into the Commodore's private office. The latter glared at the young inventor and re-

marked: "Young man, as I understand your proposition, you intend to stop a train of cars with some bottled wind. Is that right?" Westinghouse partially admitted that such was the case and went on to explain. He was cut short with the remark: "Well, I have no time to talk to cranks. There's the door."

What a transformation later! Westinghouse succeeded through perseverance in getting another road to give the air-brake a trial. Commodore Vanderbilt had to accept the Westinghouse invention. The sequel we know. There is not a railroad, steam or

Overlooked an Opportunity

electric, anywhere, but is equipped with the Westinghouse air-brake. The men who backed Westinghouse made millions through their ability to look into the future and realize the possibilities of the invention that was laid before them. The Westinghouse Air-Brake Company has paid as high as forty per cent dividends on the par value of its stock.

Those Who Profited

Thirty-five years ago had a man told you that it would be possible to record spoken words and reproduce them even after the death of the speaker, you would have told the prophesier, that he was a fit candidate for a

The Talking Machine

padded cell. Today the American Graphophone Company is capitalized for $5,000,000 and has paid over one million dollars in dividends to its fortunate stockholders who were keen enough to take Edison at his word and put up the necessary money to promote a company to manufacture the machine for the waiting world.

The Incandescent Lamp

Had a man told your father when he was a boy that some day little glass bulbs containing a tiny filament would replace candles and oil lamps for lighting homes, stores and offices, your sire would have gone home and told about seeing a man who

ought to be locked up. But look what has happened. Edison Electric shares that sold at $100 within a year brought $4,000. The shareholders in the Edison Illuminating Company realized thousands of dollars on their investment.

Howe and the Sewing Machine

The life story of Elias Howe reads like a fairy tale. After he had invented the sewing machine, he was so coldly treated in America that he sailed for England only to receive more rebuffs. He came back to America, became connected with men of foresight and some money. Howe amassed a fortune, estimated at over $2,000,000, a

mighty sum in his day. During the Civil war when the payment of the troops was delayed by the government he advanced the necessary money.

Each $1,000 invested originally in the Singer Manufacturing Company at its incorporation bought shares that are today worth over $100,000, and each share has made for its owner a fortune in dividends alone.

In 1878 a company was formed by Gordon McKay to manufacture an improved machine for making boots and shoes. He knew he had the invention but to convince others was a difficult task. He peddled his stock

A Shoe Making Machine

among acquaintances in Lowell, New Bedford and other Massachusetts cities. Those men who helped McKay get started by putting up a very little money eventually became millionaires. The United Shoe Machinery Corporation which has since absorbed the original McKay Company is capitalized for fifty million dollars.

A Sorrowful Lesson

What a sorrowful lesson for those skeptics who scorned McKay and failed to heed his advice. Happy is the man who can say, "I told you so," when he has made enough money to warrant the expression.

The writer might go on at

length and tell of a hundred more examples but all have the same moral. A brief mention of a few is evident proof.

The Pneumatic Tire

The Dunlop Tire Company originally started business with $112,000. Within a few years the stockholders had realized $3,000,000 in dividends; shortly after this the business, including the valuable patents on a pneumatic tire sold for $15,000,000.

The Adding Machine

The Burroughs Adding Machine Company, owner of a patent that was only a few years ago merely an idea, has a capital stock of $5,000,000. No wonder. They have over 30,000 machines in use and every one

is ticking dividends at the same time it is adding a column of figures.

The Combined Harvester

Little did McCormick think when he helped to perfect the combined harvester that his sons would be the controlling interest in a $130,000,000 corporation with eighteen millionaires on the board of directors.

Patterson and the Cash Register

John Patterson, president of the National Cash Register Company, was at one time a small country merchant. Today he is the head of a company employing 5100 men in the factory, 7500 salesmen working in every corner of the globe, a company that makes 6000 machines a

year valued at $16,000,000. There are over a half million cash registers in use and the profit on them has paid thousands and thousands of dollars to the men who put their shoulders to the wheel with Patterson.

One can run the gamut of comparatively recent inventions from a little parlor match to a mighty locomotive and the story is the same. First the invention, later its development by those who financed the project and finally a succession of dividends to those men who had the intuition, the foresight, the judgment to invest their money

The Same Story

in promoting the sale of something that fills a human need.

An industrial enterprise dealing with a public necessity always has been and always will be a big money maker.

Two decades ago the people said that the last word in inventions had been spoken. They were overwhelmed with the many inventions and thought that the limit had been reached. But the world moves.

The Last Word Not Yet Spoken

There will be just as many examples in the next twenty years and each and every one will have to go through the same evolution. The inventor will develop the idea, a few people

will have courage enough to back him and the reward will be theirs while the public at large will only have something to do with the invention after all the preliminary work has been done, their opportunity lost for big returns on a small investment.

So will it be with the Burlingame telegraphing typewriter. Today it is going through the second process in its development. Now is the time when a small investment blazes the way for a fortune.

The Way to a Fortune

Fortunate the man who joins Elmer Burlingame and gives the world a machine it has been

waiting for all these years; in fact ever since the rapid expansion of the commercial world has been calling for devices that will help it transact business quicker, with more accuracy and less expense!

Who Will Be The Ones That Will Profit?

When one reviews the great successes made by inventions, learns of their development and realizes the enormous sums of money that have gone to those who financed the various enterprises, will he not agree with the famous philosopher, Herbert Spencer who has said:

"There is a principle which is a bar against all information, which is proof

against all argument and which cannot fail to keep a man in everlasting ignorance; this principle is contempt, prior to examination."

* * * * * *

Conclusion

In concluding this story of Elmer Burlingame the writer hopes that he has done justice to the young electrician who has given the world so much; and he wonders who will be the doubters that will only accept the truth when it is forced upon them by seeing messages actually being sent by the new system here, there and everywhere; and he further wonders who will

be the fortunate ones that will answer to the call of opportunity that is rapping at their door.

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